No. 8100071

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

North American Plant Breeders

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

ALFALFA

'Granada'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington *this* 27th *day of* May *in the year of our Lord one thousand nine hundred and* eighty-two.

Attest:

Kenneth H. Evans
Acting
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R Block
Secretary of Agriculture

AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

FORM APPROVED
OMB NO. 40-R3822

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1a. TEMPORARY DESIGNATION OF VARIETY	1b. VARIETY NAME	FOR OFFICIAL USE ONLY
NAPB 91	Granada	PV NUMBER 8100071

2. KIND NAME	3. GENUS AND SPECIES NAME	FILING DATE	TIME A.M. / P.M.
Alfalfa	Medicago sativa	3/9/81	2:30 (P.M.)
4. FAMILY NAME (BOTANICAL)	**5. DATE OF DETERMINATION**	**FEE RECEIVED**	**DATE**
~~Leguminacea~~ FABACEAE	March 1979	$ 500.00 $ 250.00	3/9/81 5/14/82

6. NAME OF APPLICANT(S)	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*	8. TELEPHONE AREA CODE AND NUMBER
North American Plant Breeders	5201 Johnson Drive Mission, Kansas 66201	(913) 384-4940

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION	11. DATE OF INCORPORATION
Corporation	Connecticut	March 9, 1973

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS:

Mr. Giles Dixon, North American Plant Breeders, P. O. Box 2955, Mission, Kansas 66201
Dr. Jim B. Moutray, North American Plant Breeders, R. R. #3, Ames, Iowa 50010

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [ ] 13D. Exhibit D, Additional Description of the Variety.

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a). (If "Yes," answer 14B and 14C below.)* [ ] YES [X] NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?	14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED?
[X] YES [ ] NO	[X] FOUNDATION [ ] REGISTERED [X] CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? [X] YES [ ] NO

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

December 24, 1980 (DATE) — (SIGNATURE OF APPLICANT)

December 24, 1980 (DATE) — (SIGNATURE OF APPLICANT)

FORM GR-470 (1-78)

INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and $500 fee ($250 filing fee and $250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

5 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.

13a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.

13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.

13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.

13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.

14a If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)

15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

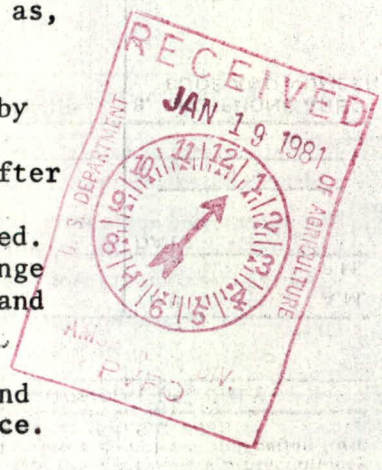


Exhibit A

Origin and Breeding History of the Variety

'Granada'

Granada is a synthetic cultivar with parentage tracing entirely to 'Cuf 101'. 'Cuf 101' was subjected to two cycles of selection for resistance to Phytophthora root rot in the Ames, Iowa field nursery, followed by one cycle of selection for resistance to blue alfalfa aphid in the greenhouse.

Breeder seed was formed by interpollination of 2106 plants under field isolation near Nampa, Idaho.

During seed multiplication, no variants beyond the limits defined under Exhibit C have been found and multiplication procedure will ensure that seed being sold as 'Granada' will not be shifted in characteristics beyond presently acceptable limits for alfalfa cultivars.

It is also confirmed that 'Granada' meets presently acceptable levels of uniformity for alfalfa cultivars.

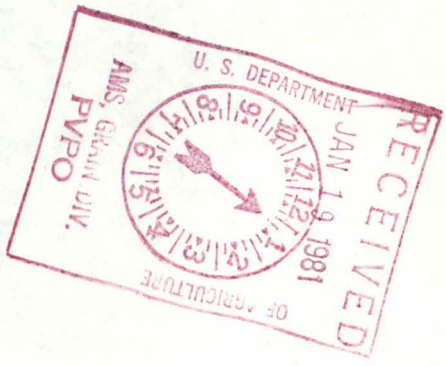

U. S. DEPARTMENT OF AGRICULTURE
RECEIVED
JAN 19 1981
AMS, Grain Div.
PPO

Exhibit B Amended

Novelty Statement

Granada

Granada most closely resembles the cultivar Cuf 101. Granada differs from Cuf 101 by having a significantly higher level of resistance to Phytophthora root rot.

Granada is the only very non-dormant variety with a high level of resistance to the blue alfalfa aphid and Phytophthora root rot.

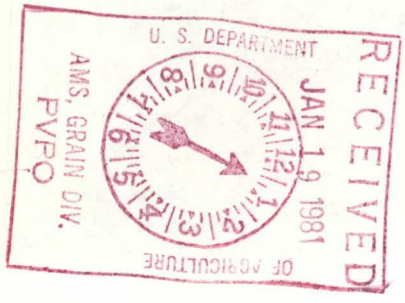
02-15-82

Table 1

Blue alfalfa aphid resistance of selected cultivars. NAPB Ames, Iowa 1980

	Percent Resistance[1]
Cuf 101 resistant check	35.2
PA-1 susceptible check	0.2
WL 514	9.3
Granada	45.2
LSD .05	9.60

1 Resistance defined as those plants which are able to continue to elongate after 5 weeks of heavy infestation when inoculated at the cotyledon stage in the greenhouse.


RECEIVED
JAN 19 1981
U. S. DEPARTMENT
OF AGRICULTURE
AMS, GRAIN DIV.
PVPO

1976 Minnesota Phytophthora Root Rot Variety Evaluation Study (Public)

Entry Designation					
Number	Name	Seed Lot No.	Originator	% O+1*	ASI**
1	Iowa 75-1	3343	I.T. Carlson, Iowa State	5.0	3.64
2	RSW A2-Anl	3344	G.R. Buss, V.P.I.	4.5	4.27
3	RSW B2-Anl	3345	"	2.1	4.18
4	WGS	3348	E.T. Bingham, Univ. of Wis.	26.4	3.18
5	WLR	3349	"	27.8	3.16
6	SD 7541, Syn 2	3351	M.D. Rumbaugh, S. Dakota	0.5	4.58
7	SD Common (Butte, Co.)	3352	"	13.4	3.65
8	Daneb 1, Syn 1	3353	"	4.0	4.08
9	N.Y. Sel. 1	3458	R.P. Murphy, Cornell Univ.	32.4	2.94
10	WYSI	3355	R.N. Peaden, ARS, USDA-Wash.	4.6	3.63
11	K75-8	3358	E.L. Sorensen, ARS, USDA-Kan.	12.6	3.56
12	K75-11	3359	"	31.0	2.94
13	K75-12	3360	"	17.0	3.51
14	N.S. 68 Syn 3	3460		1.9	4.18
15	N.S. 72 Syn 2	3461	W.R. Kehr, ARS, USDA-Neb.	3.5	4.15
16	N.S. 72 PRR1 Syn 2	3462	"	16.7	3.36
17	N.S. 72 PRR2 Syn 2	3463	"	28.1	3.03
18	N.S. 77 PRR1, PA1, SAA1	3464	"	5.0	3.76
19	N.S. 81 PRR1, PA1, SAA1	3465	"	22.6	3.31
20	N.S. 82 PRR1, Syn 2	3466	"	13.3	3.47
21	Vernal RK Res.	3361	O.J. Hunt, ARS, USDA-Nev.	3.8	4.03
22	Wash. Sn I	3362	"	9.5	3.73
23	CUF 101	3363	W.F. Lehman, Univ. of Cal.	19.8	3.44
24	UC 76	3459	"	31.4	3.05
25	Mn BA-4	3212	Barnes & Frosheiser, ARS, USDA-MN	4.8	3.79
26	Mn C-5	3258	"	22.7	3.18
27	Mn NC-4	3285	"	14.8	3.55
28	Mn Rh-Pop 1,3	3289	"	4.2	3.95
29	Mn Rh-Pop 2,3	3290	"	6.2	4.09
30	BIC5-WH, Rh	3291	"	6.2	3.81
31	Mn HCRR PX-2	3092	"	1.3	4.04
32	Mn FR-H	3293	"	14.2	3.68
33	Mn FR-MH	3294	"	4.1	4.14
34	Mn FR-SW	3295	"	23.3	3.28
35	Chilean 21-5	3298	Varieties	0.4	4.75
36	Drylander	3365	"	12.1	3.88
37	Mesilla	3232	"	1.9	3.91
38	New Mexico Common	3234	"	3.0	4.12
39	New Mexico 11-1	3233	"	1.7	4.08
40	Vista	3426	"	0.4	4.55

Entry Designation					
Number	Name	Seed Lot No.	Originator	% O+1*	ASI**
41	Zia	3235	Varieties	7.5	3.70
42	Saranac	3341	"	2.3	4.24
43	Agate	2892+3093	Check	34.0	2.87
			LSD .05		0.40
			.01		0.53
			CV %		6.6

* Plants scored 1 and 2 (on a 1-6 scale) considered resistant.

** Calculated on basis of average severity infection of individual plants in each of 3 replications (about 75 plants observed per entry per rep.)


U.S. DEPARTMENT
RECEIVED
JAN 29 1982
AMS, LPG&S DIV.
RVPO

BILL OF SALE AND ASSIGNMENT

KNOW ALL MEN BY THESE PRESENTS that AGRIPRO BIOSCIENCES INC., a Delaware corporation (hereinafter referred to as "Seller"), pursuant to that certain Asset Purchase Agreement of even date herewith by and between Seller and AGR ACQUISITION CORPORATION, a Delaware corporation (hereinafter referred to as "Buyer") and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, does hereby grant, bargain, sell, assign, convey and deliver unto Buyer, all of Seller's right, title and interest in and to the plant varieties owned/registered by Seller and more particularly set forth on Exhibit A attached hereto for which PVP Certificates have been issued by or may be pending before the U. S. Department of Agriculture.

TO HAVE AND TO HOLD UNTO PURCHASER, its successors and assigns forever.

IN WITNESS WHEREOF, Seller has executed this Bill of Sale and Assignment as of the 30th day of June, 1994.

AGRIPRO BIOSCIENCES INC.

BY: W. A. Zama

Title: President

STATE OF KANSAS, COUNTY OF JOHNSON

Before me, the undersigned, a Notary Public of the State and County aforesaid, personally appeared W. A. ZAMA with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence) and who, upon oath, acknowledged himself to be the PRESIDENT of Agripro Biosciences Inc., the within named bargainor, a corporation, and that he as such PRESIDENT, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation by himself as PRESIDENT.

WITNESS my hand and Notarial Seal at office the day and year above written.

Alma M. Weaver
Notary Public

My Commission Expires:

June 22, 1998

ALMA M. WEAVER
NOTARY PUBLIC
STATE OF KANSAS
My Appt. Exp. June 22, 1998

State of Delaware

Office of the Secretary of State

I, EDWARD J. FREEL, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "AGR ACQUISITION CORPORATION", CHANGING ITS NAME FROM "AGR ACQUISITION CORPORATION" TO "AGRIPRO SEEDS, INC.", FILED IN THIS OFFICE ON THE THIRTIETH DAY OF JUNE, A.D. 1994, AT 4:30 O'CLOCK P.M.

A CERTIFIED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS FOR RECORDING.

Edward J. Freel

SECRETARY OF STATE

2394087 8100

944121584

AUTHENTICATION: 7169071

DATE: 07-01-94

CERTIFICATE OF AMENDMENT
OF
CERTIFICATE OF INCORPORATION
OF
AGR ACQUISITION CORPORATION

AGR Acquisition Corporation, a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware,

DOES HEREBY CERTIFY:

FIRST: that the Board of Directors of said corporation, by the unanimous written consent of its members filed with the minutes of the Board, adopted a resolution proposing and declaring advisable the following amendment to the Certificate of Incorporation of said corporation:

RESOLVED, that the Certificate of Incorporation of this corporation be amended by changing the Article thereof numbered "ARTICLE I" so that, as amended, said Article shall be and read as follows:

"ARTICLE I

Name

The name of the corporation (hereinafter called the 'Corporation') is Agripro Seeds, Inc."

SECOND: That in lieu of a meeting and vote of stockholders, the sole shareholder of the corporation has given unanimous written consent to said amendment in accordance with the provisions of Section 228 of the General Corporation Law of the State of Delaware.

THIRD: That the aforesaid amendment was duly adopted in accordance with the applicable provisions of Sections 242 and 228 of the General Corporation Law of the State of Delaware.

FOURTH: That the capital of said corporation shall not be reduced under or by reason of said amendment.

IN WITNESS WHEREOF, said AGR Acquisition Corporation has caused this certificate to be signed by Gary T. Hancock, its President, and attested by Ann Steelman, its Secretary, this 30th day of June, 1994.

AGR ACQUISITION CORPORATION

BY: Gary T. Hancock
Gary T. Hancock, President

ATTEST:

BY: Ann Steelman
Ann Steelman, Secretary

8100071

FORM GR 470-32 (2/75)

12. DISEASE, INSECT, AND NEMATODE RESISTANCE: (Enter resistance of submitted and check cultivars. Circle check cultivars used.)

INSECT	CULTIVAR	% RESISTANT PLANTS	AVG. SEVERITY INDEX (ASI)	ASI LSD .05	TEST, YEAR & LOCATION 4/
OTHER	(SUBMITTED)				
	(RES. CK.)				
	(SUS. CK.)				
NEMATODE	**CULTIVAR**	**% RESISTANT PLANTS**	**INDEX (ASI)**	**ASI LSD .05**	**TEST, YEAR & LOCATION 4/**
STEM NEMATODE	(SUBMITTED)				
	(RES. CK.) LAHONTAN				
	(SUS. CK.) RANGER				
NORTHERN ROOT KNOT NEMATODE	(SUBMITTED)				
	(RES. CK.) NEV. SYN. XX				
	(SUS. CK.) LAHONTAN				
SOUTHERN ROOT KNOT NEMATODE	(SUBMITTED)				
	(RES. CK.) MOAPA 69				
	(SUS. CK.) LAHONTAN				
OTHER	(SUBMITTED)				
	(RES. CK.)				
	(SUS. CK.)				

13. INDICATE A VARIETY THAT MOST CLOSELY RESEMBLES THE VARIETY SUBMITTED FOR THE FOLLOWING CHARACTERS:

CHARACTER	VARIETY	CHARACTER	VARIETY
AREA OF ADAPTATION	Cuf 101	PLANT HEIGHT	Cuf 101
RECOVERY AFTER CUTTING	Cuf 101	WINTER HARDINESS	Cuf 101

REFERENCES

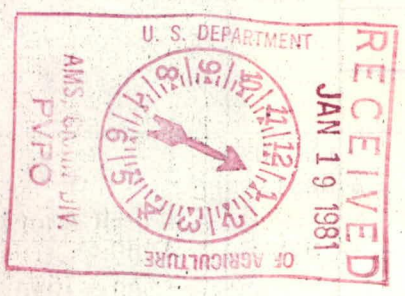
Barnes, D.K., and C.H. Hanson, An Illustrated Summary of Genetic Traits in Tetraploid and Diploid Alfalfa, ARS Technical Bul. 1370.

Barnes, D.K., et al, Standard Tests to Characterize Pest Resistance in Alfalfa Varieties. ARS-NC-19, September 1974.

Nittler, L.W., G.W. McKee, and J.L. Newcomer, Principles and Methods of Testing Alfalfa Seed for Varietal Purity. New York Agricultural Experiment Station Bul. 807.

USDA Agricultural Handbook No. 424.

COMMENTS



F 10

8100671

12. DISEASE, INSECT, AND NEMATODE RESISTANCE: (Enter resistance of submitted and check cultivars. Circle check cultivars used.)

DISEASE	CULTIVAR	% RESISTANT PLANTS	AVG. SEVERITY INDEX (ASI)	ASI LSD .05	TEST, YEAR & LOCATION 4/
Fusarium wilt	(SUBMITTED)	55.2	too Low		University of Minnesota 1979 St. Paul
OTHER	(RES. CK.) Moapa 69	62.8		7	
	(SUS. CK.) Mn Gn-1	7.6			
	(SUBMITTED)				
OTHER	(RES. CK.)				
	(SUS. CK.)				

INSECT	CULTIVAR	% SEEDLING SURVIVAL	AVG' SEVERITY INDEX (ASI)	ASI LSD .05	TEST, YEAR & LOCATION 4/
	(SUBMITTED)				
PEA APHID	(RES. CK.) KANZA				
	(SUS. CK.) RANGER				
	(SUBMITTED)	65.8	← Not STD V	05 ing val	Tucson, Arizona 1979 Dr. Merv Nielson
SPOTTED ALFALFA APHID Biotype H	(RES. CK.) ~~KANZA~~ MSTT	68.3			
	(SUS. CK.) RANGER Caliverde	0.0		6	

INSECT	CULTIVAR	% DEFOLIATION		05	TEST, YEAR & LOCATION 4/
	(SUBMITTED)				
ALFALFA WEEVIL	(RES. CK.) ARK				
	(SUS. CK.) VERNAL				

INSECT	CULTIVAR	% RESISTANT PLANTS	EMERGED ADULTS PER PLANT	EMERGED LSD .05	TEST, YEAR & LOCATION 4/
	(SUBMITTED)				
ALFALFA SEED CHALCID	(RES. CK.) LAHONTAN				
	(SUS. CK.) SONORA				

INSECT	CULTIVAR	% RESISTANT PLANTS	AVG. SEVERITY INDEX (ASI)	ASI LSD .05	TEST, YEAR & LOCATION 4/
	(SUBMITTED)				
POTATO LEAF-HOPPER	(RES. CK.)				
	(SUS. CK.)				
Blue Alfalfa	(SUBMITTED)	45.2	too low	5 tance	North American Plant Breeders 1980 Ames, Iowa
OTHER	(RES. CK.) Cuf 101	35.2			
Aphid	(SUS. CK.) PA-1	0.2			

4/ Give: The institution in charge of test, (2) year, and (3) location if it differs from procedure suggested in ARS-NC-19, September 1974.

Resistance defined as those plants which are able to continue to elongate after 5 weeks of heavy infestation when inoculated at the cotyledon stage in the greenhouse.

8100071

10. GIVE ITEM LENGTH FREQUENCY DISTRIBUTION FOR SUBMITTED AND CHECK STANDARD VARIETIES 1/

VARIETY NAME	STEM LENGTH FREQUENCY DISTRIBUTION 2/											AVERAGE STEM LENGTH
	0 – 5 mm. %	6 – 10 mm. %	11 – 15 mm. %	16 – 20 mm. %	21 – 30 mm. %	31 – 40 mm. %	41 – 50 mm. %	51 – 60 mm. %	61 – 70 mm. %	71 – 80 mm. %	81 + mm. %	

11. FLOWER COLOR 3/ (DETERMINE COLOR ON FRESHLY OPENED FLOWERS)

[ ] % PURPLE [ ] % VARIEGATED [ ] % YELLOW [ ] % CREAM [ ] % WHITE

12. DISEASE, INSECT, AND NEMATODE RESISTANCE: (Enter resistance of submitted and check cultivars. Circle check cultivars used.)

DISEASE	CULTIVAR	% RESISTANT PLANTS	AVG. SEVERITY INDEX (ASI)	ASI LSD .05	TEST, YEAR & LOCATION 4/
BACTERIAL WILT	(SUBMITTED)	3.0	03		University of Minnesota 1979 St. Paul
	(RES. CK.) VERNAL	39.2	42		
	(SUS. CK.) NARRAGANSETT	0.0	00		
ANTHRACNOSE	(SUBMITTED)				
	(RES. CK.) ARC				
	(SUS. CK.) SARANAC				
COMMON LEAF SPOT	(SUBMITTED)				
	(RES. CK.) RAMSEY				
	(SUS. CK.) RANGER				
DOWNY MILDEW	(SUBMITTED)				
	(RES. CK.) SARANAC				
	(SUS. CK.) KANZA				
PHYTOPHTHORA ROOT ROT	(SUBMITTED)	46.7	46		University of Minnesota 1979 St. Paul
	(RES. CK.) AGATE	43.7	43		
	(SUS. CK.) SARANAC	2.1	02		
OTHER	(SUBMITTED)				
	(RES. CK.)				
	(SUS. CK.)				

1/ Preferred standards: Saranac, Vernal, Norseman, Lahontan, Mesa Sirsa. Twelve hours light at 25° C with 20,000 lux of cool white florescent; 2,000 lux of incandescent filament light and twelve hours darkness at 5° C.

2/ From cotyledonary node to tip of stem 20-days after planting.

3/ For further clarification consult USDA Agricultural Handbook No. 424.

4/ Give: The institution in charge of test, (2) year, and (3) location of test. Describe test procedure if it differs from procedure suggested in ARS-NC-19, September 1974.

FORM APPROVED, OMB NO. 40-R3712

FORM GR 470-32
(3/75)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

EXHIBIT C

OBJECTIVE DESCRIPTION OF VARIETY

Alfalfa (Medicago sativa L. complex)

NAME OF APPLICANT(S)
North American Plant Breeders

ADDRESS (*Street and No., or R.F.D. No., City, State, and Zip Code*)
5201 Johnson Drive
Mission, Kansas 66201

VARIETY NAME OR TEMPORARY DESIGNATION
Granada

FOR OFFICIAL USE ONLY
PVPO NUMBER 8100071

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

NOTE: For single plant data a minimum of 100 plants is suggested

1. PRIMARY AREA OF ADAPTATION

[5]

1 = NORTHWEST 2 = NORTHCENTRAL 3 = NORTHEAST
4 = SOUTHEAST 5 = SOUTHWEST 6 = SOUTHERN PLAINS
7 = INTERMOUNTAIN

INDICATE AREA WHERE TEST WAS CONDUCTED. FURTHER EXPLANATION CAN GO IN COMMENTS AT THE END OF THE FORM.

[5,2] AREA TESTED

2. WINTER HARDINESS

[1]

1 = NON-HARDY (Mesa Sirsa) 3 = INTERMEDIATE NON-HARDY
5 = MODERATELY HARDY (Saranac) 7 = HARDY (Vernal)
9 = EXTREMELY HARDY (Norseman)

[5,2] AREA TESTED

[2] SOURCE OF INFORMATION: 1 = ANTICIPATED 2 = MEASURED

3. FALL GROWTH HABIT

[1]

1 = ERECT (Mesa Sirsa) 3 = SEMIERECT (DuPuits)
5 = INTERMEDIATE (Saranac) 7 = SEMIDECUMENT (Vernal)
9 = DECUMBENT (Norsement)

[5,2] AREA TESTED

4. RECOVERY AFTER FIRST SPRING CUTTING

[1]

1 = VERY FAST (Mesa Sirsa) 3 = FAST (Saranac) 5 = INTERMEDIATE
7 = SLOW (Vernal) 9 = VERY SLOW (Norseman)

[5] AREA TESTED

5. FLOWERING DATE (FIRST SPRING GROWTH)

[ ][ ] DAYS EARLIER THAN . . . . .
[ ][ ] DAYS LATER THAN . . . . .

[ ]

1 = MESA SIRSA 2 = LAHONTAN
3 = SARANAC 4 = VERNAL
5 = NORSEMAN

[ ] AREA TESTED

6. CROWN TYPE

[9]

1 = SPREADING ROOTS 3 = SPREADING RHIZOMES (Teton)
5 = BROAD (Vernal) 7 = INTERMEDIATE (Saranac)
9 = NARROW (Mesa Sirsa)

[5,2] AREA TESTED

7. PLANT COLOR

[5]

3 = DARK GREEN (Weevlchek) 5 = GREEN (Vernal)
7 = LIGHT GREEN (Ranger)

[5] AREA TESTED

8. HAIRINESS

[ ][ ][ ] % PLANTS WITH PUBESCENT STEMS

[ ][ ][ ] % PLANTS WITH PUBESCENT PODS

9. POD SHAPE

[ ][ ][ ] % PLANTS WITH TIGHT COILS

[ ][ ][ ] % PLANTS WITH LOOSE COILS

[ ][ ][ ] % PLANTS WITH SICKLE PODS (Less than 1 coil)